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# Marketing Research Report: Lead Poisoning Dilemma in Scott County

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BUSN 324

Dr. Choi Hyeong-Gyu

# Marketing Research Report: Lead Poisoning Dilemma in Scott County

Hoang Nguyen

Brendan Gould

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## **Executive Summary**

Research was contracted from August-October 2017 by Augustana College students to examine opportunities for improving media engagement regarding the prevalent dilemma of lead poisoning within the Scott Community area. In particular, we conducted research to discover why Scott County residents are not testing their children for lead poisoning. The purpose of the research is to enhance Scott County Health Department's media outlets in order to demonstrate the seriousness of this issue and hopefully persuade as many parents as possible into getting their children tested.

### *About the Research:*

Throughout just 10 weeks, we collected and analyzed exploratory research which narrowed down SCHD's decision problem in two research objectives: (1) Determine their target demographics' current awareness and intentions toward Lead Poisoning, and (2) Determine what is the best media outlet to cater to the target demographic. We gathered 296 survey responses to gather our key results.

### *Key Results:*

- People display negative opinions toward lead, but do not fully understand how lead is present in their systems. They are not well-educated about the sources of harmful lead.
- People tend to overlook/ignore the harmful effects of lead on the body, since it takes years to start displaying any poisoning symptoms. Due to the fact that it's such a slow, prolonged process... people are less worried about lead.

- Lead poisoning is also directly associated with particular countries, and not all are aware of its prevalence as a natural element.
- An effective method to spread lead poisoning awareness would be to target high schools and teenagers, so that they understand the horrors of lead poisoning.

*Recommendations:*

1. SCHD managers should focus on Television ads, Mobile News update, and Social Media to reach the top 3 most educated demographic groups. They are more likely to respond to these ads than demographics with lower education level.
2. Income level and gender information should not be considered when SCHD managers work on their media choices, but age and education level should.

## **Introduction**

The staff of the Scott County Health Department is inquiring about the lack of child lead testing. Lead poisoning is a prevalent risk in the Scott County community, especially to children. Many areas of Scott County have older homes, and some of the paints used in the inside of these homes contain lead. Lead poisoning can occur from children chewing on window sills, or the paint flaking off and being inhaled. Although lead poisoning comes in many forms, household paint is generally a main cause. The Scott County Health Department is a government agency on the front lines of public health, and their goal is to help create and maintain good conditions in the community so that people can live a better and healthier life. Scott County Health Department's staffs work constantly to maintain food and water safety, air quality, prevent communicable diseases, provide education, and much more.

One of Scott County's alarming, yet often overlooked issue is the vast number of children exposed to the risk of lead poisoning. Whether they are inhaling particles of lead, or chewing on lead-painted window sills, the low number of children being tested for lead poses an alarming awareness issue amongst parents living in the Scott County area. Simply stated, the decision problem facing the SCHD's manager is: "Why aren't parents in the Scott County area testing their children for lead poisoning?"

The staffs at SCHD have been serving the quad cities for decades, but they still do not possess clear knowledge as to why parents refuse to have their child tested at the SCHD. Our exploratory research narrows down SCHD's decision problem in two research objectives: (1) Determine their target demographics' current awareness and intentions toward Lead Poisoning, and (2) Determine what is the best media outlet to cater to the target demographic. One thing we noticed early on was that the Scott

County Health Department has no social media awareness. Social media can be a key factor in spreading information and creating awareness about health issues. The reach of social media is extremely large, and is useful for reaching audiences in ways that traditional media cannot.

## **Part 1: Qualitative Big Data Study**

### **Method:**

**Research Design:** After gaining a general understanding of the issue, we began the data collection process with an exploratory research. We initially viewed and collected a variety of online resources on childhood lead poisoning that could be relevant to our target market. This would provide comprehensive background information to proceed with our descriptive study. “The infographic channel” on YouTube published an informative video on lead poisoning that attracted a large number of responses. This, in turn, provided good insights on what information social media users are seeking on this non-traditional information source. A surprising amount of users do not possess the basic knowledge of lead, resulting in many questions asking “are pencil leads lead?”, “what is lead?”, “is it lead or led?”. Many others displayed worried sentiments, asking questions about their own home and children’s wellbeing. Users that ask these questions represent a huge potential market for SCHD and other health department to gain customers.

We also conducted Facebook and Twitter hashtags analysis in order to gain more insights on what people are saying about lead poisoning. The most relevant hashtags that we found haven’t been used very often in recent years, reflecting a state

of low awareness on this epidemic. The two hashtags we analyzed were *#Bmoreleadfree* and *#LeadPoisoning*, both show minimal usage in recent times.

Additionally, we also conducted in depth interviews with a physician from Genesis healthcare system, whose job involves working with parents and children affected by lead poisoning. The goal is to understand how the testing process works, and how to follow up with the test result. Lead testing starts from the the age of one. Physicians work together with the parents to alleviate any fear and worries, while providing them with suggestions regarding further exposure prevention. These insights aided us in the development of the survey form which we used for our primary research.

## **Results:**

After our exploratory research, we consolidated the reasons for the lack of awareness on lead poisoning. Results are as follows:

- People display negative opinions toward lead, but do not fully understand how lead is present in their systems. They are not well-educated about the sources of harmful lead.
- People tend to overlook/ignore the harmful effects of lead on the body, since it takes years to start displaying any poisoning symptoms. Due to the fact that it's such a slow, prolonged process... people are less worried about lead.
- Lead poisoning is also directly associated with particular countries, and not all are aware of its prevalence as a natural element.
- An effective method to spread lead poisoning awareness would be to target high schools and teenagers, so that they understand the horrors of lead poisoning.



**Limitations:**

The data we collected from our secondary data research came from a Youtube video from the Infographic Channel. Though the information provided in the video is deemed useful, it is by no mean a scholarly source, so we could only gather insights from the comments section, rather than the video's contents. Furthermore, our hashtag analysis only looked at two specific hashtags that were found online. There could be more hashtags online that are better suited for analysis. Still, the general information we collected is still valuable to our research process; it helps us design our primary research, and backs up our suggestions to SCHD.

**Part 2: Primary Data Collection****Methods:**

For descriptive research, we created a Google Doc survey and had them sent to a random sample of participants from the surrounding areas, identified in our physician interview. Online survey can reach more potential audiences.

The questionnaire contained a variety of open-ended and likert type questions designed to get the information needed to address the research objectives. Please refer to appendix A to find the questions coding. With the help of Genesis healthcare, we were able to send the survey out to the surrounding areas, where SCHD receives most of their clients. With the help of Genesis, our data collection grew to a total of 273 responses by our analysis date.

## Results:

**Section 1:** Determine their target demographics' current awareness and intentions toward Lead Poisoning.

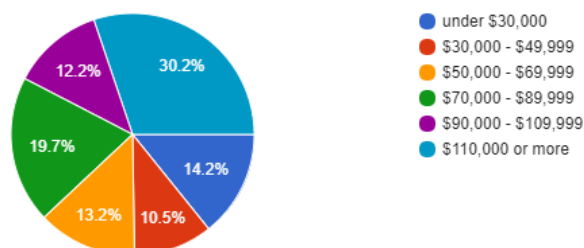
### Overall Demographics:

The overall demographics that we collected through our survey can be described as:

- Female (216/295, 73.2%)
- Age distribution:
  - 18-24: 79 respondents - 26.9%
  - 25-44: 103 respondents - 34.9%
  - 45-75: 109 respondents - 38.0%
- Equal distribution in Income ( 35.9% with annual income of \$30,000 to \$69,999, 33% with income of \$70,000 to \$109,999, and 31,1% that says 110,000 or more)

What was your total household income before taxes during the past 12 months?

295 responses



The data included in Appendix includes complete information on these demographic variables.

Because the ultimate goal for SCHD is to find out how to raise awareness and intentions within their target demographic; we've decided to analyze our variables with demographic variables such as income, age, education level, and gender.

### **Awareness and intentions in relations to demographic data**

In this section, we present the relationship between our awareness and intentions variables with demographic data. The assumption is that if the differences are statistically significant at an alpha level of  $p < 0.05$ , we reject our hypothesis that there are no differences.

#### **1. Awareness and Intentions in relation with Gender:**

Our test of homogeneity shows that all awareness and intentions variables:

- Q#3 Do you agree that lead poisoning is an important issue in today's world?  
(ATT1)
- Q#4 Is childhood lead poisoning personally relevant to you? (AWS1)
- Q#5 Are you motivated to learn more about the dangers of childhood lead poisoning? (ATT2)
- Q#6 Do you believe you could benefit from learning more about lead poisoning?  
(ATT3)
- Q#7 Would you recommend that your friends and neighbors learn more about lead poisoning? (INT1)
- Q#8 How knowledgeable are you of the dangers and sources of lead poisoning?  
(AWS2)

- Q#9 Are you likely to ask your doctor (or a pediatrician if you have children) for more information regarding lead poisoning at your next doctor visit? (INT2)
- Q#10 Do you feel there has been significant media coverage of lead poisoning in your area? (AWS3)

All the above have a significance level well above our cut-off point of  $p < 0.05$ . So we failed to reject the null hypothesis: there are no difference within the genders.

However, our ANOVA test shows that all awareness and intentions variables have significant level above  $p < 0.05$ , which means we failed to reject the null hypothesis: there are no statistically significant difference between the means of the awareness and intentions variables and genders.

## 2. Awareness and intentions in relation with Age:

**Table 1: Awareness, intentions and age summary of ANOVA tests**

Dependent Variables	df <sub>1</sub>	df <sub>2</sub>	F	Sig.
ATT1	2	284	9.270	.000
INT1	2	284	4.031	.019
AWS2	2	284	32.785	.000
AWS3	2	284	12.430	.000

Subsequent ANOVA testing shows that all these variables, when compared with the age demographic data, have a significant level much less than .005. We then reject the null hypothesis that there are no statistically significant difference between the awareness and intention variables and the demographic Age variables.

POST-HOC test further shows:

- **ATT1** display a statistically significant alpha level between the Younger 18-24 age group versus the Mid 25-44 and Older 45-75 age group ( $p=.001$  and  $p=.000$  respectively). While Older 45-75 and Mid 25-44 do not display such alpha level.
- **INT1** shows that the only statistically different age groups are Younger 18-24 versus Older 45-75 ( $p=.023$ ). Mid 25-44 shows no such significant difference when comparing to both Younger 18-24 and Older 45-75 ( $p=.053$  and  $p=.947$  respectively)
- **AWS2** shows that all age groups have a significant difference with each other. Younger 18-24 shows p-value of .000 to both Mid and Older age groups. While Mid 25 - 44 and Old 45-75 have a  $p=.009$  significant level.
- The same result from AWS2 is found in **AWS3**: all age groups have a significant difference with one another. Younger shows statistically significant difference level of  $p= 0.036$  towards Mid, and  $p<.000$  towards Older. Mid 25-44 and Older show a statistically significant different alpha level of  $p=.025$

**Results:** All awareness and intentions variable shows a pattern of increasing means from younger age group to mid and then older age groups. ATT1 (*“Have you ever heard about the potential dangers of child lead poisoning prior to the information provided in the paragraph above?”*) has means of 5.03, 5.72, and 5.78 respectively; of these three means, only Younger 18-24 (5.03) shows a statistically significant difference to the other means. INT1(*Would you recommend that your friends and neighbors learn more about lead poisoning?*) has means of 4.89, 5.39, and 5.45 respectively, and the only significant difference is between Younger (4.89), and Older (5.45) means. AWS2 (*How knowledgeable are you of the dangers and sources of lead poisoning?*) and AWS3 (*Do*

*you feel there has been significant media coverage of lead poisoning in your area?)*

however, shows statistically significant differences in all age groups, with the same pattern of increasing means as age gets higher. We conclude that age does have a group difference with our respondents' awareness and intentions; when you are older, your response will be have a higher value than when you are younger.

### 3. Awareness and Intentions in relation with Education level:

Next, we test the correlation between all of our awareness and intentions variables with the education level demographic variable. We hypothesize that Education level affects the awareness and intentions level of our target demographic.

**Table 2: awareness, intentions and education level summary of ANOVA tests**

ANOVA	df1	df2	F	Sig.
ATT1	4	282	5.85	.000
INT1	4	282	1.912	.109
AWS2	4	282	11.001	.000
AWS3	4	282	2.095	.082
AWS1	4	282	6.359	.000
ATT2	4	282	.943	.440
ATT3	4	282	.664	.617
INT2	4	282	1.593	.176

ANOVA test shows that there is no significant difference between ATT2 (Are you motivated to learn more about the dangers of childhood lead poisoning?), ATT3 (Do you believe you could benefit from learning more about lead poisoning?), INT2 (Are you

likely to ask your doctor (or a pediatrician if you have children) for more information regarding lead poisoning at your next doctor visit?) and our education level variable. We failed to reject the null hypothesis that there are no significant difference between these variables. We removed ATT2, ATT3 and INT2 from further testing.

POST-HOC test result shows that:

- **INT1:** There are no significant difference between the variables and Education level.
- **AWS2:** “Some college credits, no diploma”, and “college degree”, “Graduate or higher” have significant differences at the p level of .000.
- **AWS1:** “College degree”, and “some college credit, no diploma” shows a statistically significant different level at  $p=.003$ . “Graduate degree or higher” and “some college credits, no diploma” also display a statistically significant difference at  $p=.001$ .

**Results:** The mean differences are most noticeable when you compare awareness and intentions with college-level and beyond education level. AWS2 (How knowledgeable are you of the dangers and sources of lead poisoning?) shows an increasing pattern; people who are still in college have a lower mean (3.81), comparing to their statistically significant difference counterpart “College Degree” (5.15), and “Graduate degree or higher” (5.60). The last group with statistically significant differences is AWS1 (Is childhood lead poisoning personally relevant to you?), grouped with “some college credits, no diploma” (mean 2.95), and “College degree” (4.03), along with “graduate degree or higher” (mean 4.14). The overall pattern of correlation is that the more

education respondents received after high school, the higher your awareness and intentions will be.

4. Awareness and intentions variables in relation with Income level:

**Table 3: awareness, intentions and income level summary of ANOVA tests**

ANOVA	df1	df2	F	sig.
ATT1	2	284	1.258	.286
INT1	2	284	.371	.690
AWS2	2	284	.949	.388
AWS3	2	284	.410	.664
AWS1	2	284	.157	.855
ATT2	2	284	.427	.653
ATT3	2	284	1.429	.241
INT2	2	284	.685	.505

ANOVA results however, show that all awareness and intentions variable have a significance level well above  $p < 0.05$ . We can then accept the null hypothesis that there are no statistically significant differences between the awareness and intentions means with our demographic income level means.

**Part 3:** Determine the best media outlets to cater to SCHD's specific demographics.

Another goal for SCHD's managers is to find out the best method that they could reach their potential audiences. To figure out this question, we've asked survey participants to list their top 3 media source where they get their news from. Since media outlets are ultimately used to spread awareness and intentions to potential customers,



we can use our findings in section 1 to formulate our conclusion for this section. Cross tabulation results are shown below:

**Table 4: Cross-tabulations results**

Media source	Count	Percentage
Television	78	27.2%
Mobile news	77	26.8%
Social Media	74	25.8%
Printed news	23	8.0%
Radio	22	7.7%
Word of mouth	9	3.1%
Other	3	1.0%
Email	1	.03%
Total	287	100%

1. Media source ranked by Education level:

**Table 5: media and education level cross-tabulations results**

Rank	Media Source	Education	Count (128)	Percentage
	Television	College Degree	27	34.6%
1	Mobile News	Graduate degree or higher	28	36.4%
2	Social Media	College credit, no diploma	41	55.4%
3	Printed News	Graduate degree or higher	11	47.8%

4	Radio	College degree	11	50%
5	Word of Mouth	College credit, no diploma	7	77.8%
6	Other	College credit, no diploma	2	66.7%
7	Email	College degree	1	100.0%

**Results:** From our awareness and intentions tests in Section 1-3, we have the conclusion that the higher your education level, the more likely you are aware and intend to react to the threat of lead poisoning. Combined with the responses and ranking in the cross-tabulations above, we suggest that SCHD managers should focus on Television ads, Mobile News update, and Social Media to reach the top 3 most educated demographic groups. They are more likely to respond to these ads than demographics with lower education level.

## 2. Media source ranked by Gender:

As stated previously, our survey data consists of mainly female respondents (73%), so cross-tabulation by this demographic variable is not statistically correct or representative of the population (section 1-1). Furthermore, previous ANOVA test results show that Gender values do not make a statistically difference in mean survey responses regarding awareness and intentions. Therefore, we conclude that gender information should not be considered when SCHD managers work on their media choices.

## 3. Media source ranked by Age:

**Table 6: media and age cross-tabulations results**

Rank	Media Source	Most recurred age	Count (152)	Percentage of that source
1	Television	Older 45-75	42	53.8%
2	Mobile News	Mid 25-44 and Older 45-75	28	36.4% (tie)
3	Social Media	Younger 18-24	42	56.8%
4	Printed News	Older 45-75	17	73.9%
5	Radio	Mid 25-44	12	54.5%
6	Word of Mouth	Younger 18-24	7	77.8%
7	Other	Older 45-75	3	100.0%
8	Email	Older 45-75	1	100.0%

**Results:** Our conclusion from section 1-2 states that: the older in age you are, the more likely that your response will have a more positive attitude comparing to when you are younger. Meaning that older populations tend to be more aware and have more intentions to react to lead poisoning. From this finding, we suggest SCHD managers to utilize television advertisements and mobile news sources to reach the Mid 25-44 and Older 45-75 populations - who are most likely to react to lead poisoning.

4. Media source ranked by Income:

Similar to the Gender section above (section 2-1), our Income variable do not show any statistically significant difference in means when compared with the awareness and intentions variables (section 1-4).

We thereby conclude that Income level do not affect awareness and intentions at a statistically significant level, and SCHD managers should not take Income level into consideration when choosing media outlets.

### **Limitations:**

The major limitation to this study is that: (1) 42% of our survey respondents are students, this can throw off some of the educational level data, along with intentions of testing their children. The total data responses however, can be representative of the population, thanks to Genesis healthcare helping us distribute this survey via their social media channel. (2) respondents who are not fully employed may not provide the best household income estimates that applies to them. If this study were to be conducted again in the future, researchers should use selective recruitment for future surveys.

### **CONCLUSIONS AND RECOMMENDATIONS**

Because this project involved discovery-oriented research, the research itself, the research itself does not offer a direct course of action for the Scott County Health Department. Instead, the results provide a wealth of background information necessary as building blocks for formulating strategies to address a key issue-"Why aren't parents in the Scott County area testing their children for lead poisoning?"

The Following is a summary of the key findings of the study and initial recommendations organized by our research problems:

**(1) Determine their target demographic's current awareness and intentions toward Lead Poisoning.**

- The typical survey taker is female (216/295, 73.2%), older (with 38.0% between the ages of 45 and 75), well educated, and with equal distribution in Income ( 35.9% with annual income of \$30,000 to \$69,999, 33% with income of \$70,000 to \$109,999, and 31,1% that says 110,000 or more).
- Subsequent ANOVA testing shows that all these variables, when compared with the age demographic data, have a significant level much less than .005. We then reject the null hypothesis that there are no statistically significant difference between the awareness and intention variables and the demographic age variable.
- All awareness and intentions variable shows a pattern of increasing means from younger age group to mid and then older age groups. Therefore, there was in fact group difference by age, and older participants appear to have more positive attitudes toward the seriousness of child lead poisoning.

We took the analysis a step further and measured awareness and intentions in relation with education level. Results showed that the overall pattern of correlation is that the more education respondents received after high school, the higher your awareness and intentions will be. Primarily, we hypothesized that education level would affect the awareness and intentions level of our target demographic. We failed to reject the null hypothesis that there are no significant difference between these variables. Therefore, the mean differences are most noticeable when you compare awareness and intentions with college-level and beyond education level. We recommend that SCHD should target mid-to-older and well-educated demographics for the most effective results in their future campaigns.

**(2) Determine what is the best media outlet to cater to the target demographic.**

- Television accounts for 27.2% of respondent media coverage, while mobile news follows with 26.8% and social media trails in third with 25.8%. The next highest percentage comes from printed news at just 8.0%.
- Results show that gender and income level do not affect awareness and intentions at a statistically significant level. However, age and education levels do.
  - Higher education level tends to result in more likeliness to be aware and give reactions to the threat of lead poisoning. The most popular response (32% of respondents) was given by those with at least some college credit. Their media choice was social media.
  - Respondents ages 18-24 and respondents ages 45-75 account for about 56% of responses, split at 28% each. 42 respondents (ages 45-75) chose TV as their top media choice. Another 42 respondents (ages 18-24) chose social media as their top media choice. Results show that the older in age you are means the more likely that your response will have a higher value comparing to when you are younger. Older populations tend to be more aware and have more intentions to react to lead poisoning.

Combined with the responses and ranking in the cross-tabulation analyses, we suggest that SCHD managers should focus on Television ads, Mobile News update, and Social Media to reach the top 3 most educated demographic groups. They are more likely to respond to these ads than demographics with lower education level. We recommend that SCHD should run a campaign via television advertisements and mobile news

websites targeting mid-to-older demographics and a separate social media campaign targeting younger demographics via social media.

## Appendices

### Appendix A

#### Data Collection Form

##### Survey Questionnaires for the Scott County Health Department (SCHD)

The Scott County Health Department dedicates itself to addressing everyday and emerging health issues. One of the department's biggest concerns lately has been lead poisoning in children. This issue has grown to become a big problem for Scott County because many of the houses located throughout the area are starting to become older and are deteriorating at a rapid rate. Lead is a poisonous metal that was once used in building materials for many years and can be found in and around homes across America. Structures built before 1980 likely contain lead unless the home has been renovated. Lead seriously affects childhood development and can cause reduced attention span, learning ability and attitude issues. Over 60% of all Iowa homes were built before 1960, so the potential of exposure to lead in the Scott County area is extremely high. The health department reports at least 50 childhood lead poisonings each year. This survey is designed to gauge the public's overall knowledge of this issue.

1. Have you ever heard about the potential dangers of child lead poisoning prior to the information provided in the paragraph above? (Y/N) (AWS)
2. Have you ever had your child/children tested for lead poisoning? (Y/N)
3. If you answered yes to the previous question, how many times have you had your child/children tested for lead poisoning?
  - a. Once
  - b. Twice
  - c. Three times
  - d. Four times
  - e. Five times or more

##### Awareness

4. Is childhood lead poisoning personally relevant to you? (AWS)  
Not at all      1      2      3      4      5      6      7      Very relevant to me
5. How knowledgeable are you of the dangers and sources of lead poisoning? (AWS)  
Not at all      1      2      3      4      5      6      7      Very knowledgeable
6. Do you feel there has been significant media coverage of lead poisoning in your area? (AWS)  
Not at all      1      2      3      4      5      6      7      Strongly feel so

##### Attitude toward lead testing

7. Are you motivated to learn more about the dangers of childhood lead poisoning? (ATT)  
Not at all interested    1    2      3      4      5      6      7      Very interested



8. Do you agree that lead poisoning is an important issue in today's world? (ATT)
- |                   |   |   |   |   |   |   |   |                |
|-------------------|---|---|---|---|---|---|---|----------------|
| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly agree |
|-------------------|---|---|---|---|---|---|---|----------------|
9. Do you believe you could benefit from learning more about lead poisoning? (ATT)
- |                   |   |   |   |   |   |   |   |                |
|-------------------|---|---|---|---|---|---|---|----------------|
| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly agree |
|-------------------|---|---|---|---|---|---|---|----------------|

#### Intentions to test lead level

10. Are you likely to ask your child's physician for more information regarding lead poisoning at their next doctor visit? (INT)
- |                    |   |   |   |   |   |   |   |                  |
|--------------------|---|---|---|---|---|---|---|------------------|
| Extremely unlikely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely likely |
|--------------------|---|---|---|---|---|---|---|------------------|
11. Would you recommend that your friends and neighbors learn more about lead poisoning? (INT)
- |                   |   |   |   |   |   |   |   |                |
|-------------------|---|---|---|---|---|---|---|----------------|
| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly agree |
|-------------------|---|---|---|---|---|---|---|----------------|

#### Demographic

12. Which media source do you use most for your news?
- TV News (e.g., CNN, Fox, CNBC, etc.)
  - Mobile News App (e.g., Times, USA Today, etc.)
  - Print Media (e.g., Newspapers, Magazine, etc.)
  - Friends, family, and/or relatives
  - Radio
  - Social Media
  - Other (please specify)
13. What is your gender?
- Male
  - Female
  - Prefer not to say
14. What is your age?
- 18-24 years old
  - 25-34 years old
  - 35-44 years old
  - 45-54 years old
  - 55-64 years old
  - 65-74 years old
  - 75 years or older
15. What is your employment status?
- Unemployed
  - Employed
  - Self employed
  - Homemaker
  - Student
  - Retired
  - Unable to work
16. What is your ethnicity?

- a. White
  - b. Hispanic or Latino
  - c. Black or African American
  - d. Native American or American Indian
  - e. Asian / Pacific Islander
  - f. Other
17. What was your total household income before taxes during the past 12 months?
- a. under \$30,000
  - b. \$30,000 - \$49,999
  - c. \$50,000 - \$69,999
  - d. \$70,000 - \$89,999
  - e. \$90,000 - \$109,999
  - f. \$110,000+
18. How many children do you have?
- a. 0
  - b. 1
  - c. 2
  - d. 3
  - e. 4
  - f. 5
  - g. 6 or more
19. What is the approximate age of your home?
- a. Before 1980
  - b. After 1980
  - c. Unknown
20. What is the highest level of school you have completed?
- a. Some high school, no diploma
  - b. High school graduate or the equivalent
  - c. Some college, no diploma
  - d. College degree
  - e. Graduate degree and higher
21. What is your zip code?

## Appendix B

### Data Tables

Q#1 Have you ever heard about the potential dangers of child lead poisoning prior to the information provided in the paragraph above? (Danger)

Response	Count	Percentage	Sample Size
Yes	273	92.5%	295
No	22	7.5%	295

Q#2 Have you ever had your child/children tested for lead poisoning? (Tested)

Response	Count	Percentage	Sample Size
Yes, my child was tested for leadpoisoning	74	40.4%	183
No, my child was not tested for leadpoisoning	64	35%	183
I don't have a child, but I had been tested for lead poisoning	5	2.7%	183
I don't have a child, but I never tested for lead poisoning	36	19.7%	183
My family members were tested	4	2.2%	183

Q#3 If you have a child, how many times have you had your child/children tested for lead poisoning? (T\_Freq)

Response	Count	Percentage	Sample Size
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Once	65	66.3%	98
Twice	18	18.4%	98
Three Times	8	8.2	98
Four Times	0	0	98
Five or More Times	7	7.1%	98

Q#3 Do you agree that lead poisoning is an important issue in today's world? (ATT1)

#### **Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
ATT1	287	1	7	5.55	1.313
Valid N (listwise)	287				

Q#4 Is childhood lead poisoning personally relevant to you? (AWS1)

#### **Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
AWS1	287	1	7	3.60	2.088
Valid N (listwise)	287				

Q#5 Are you motivated to learn more about the dangers of childhood lead poisoning? (ATT2)

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
ATT2	287	1	7	4.41	1.678
Valid N (listwise)	287				

Q#6 Do you believe you could benefit from learning more about lead poisoning? (ATT3)

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
ATT3	287	1	7	4.58	1.699
Valid N (listwise)	287				

Q#7 Would you recommend that your friends and neighbors learn more about lead poisoning? (INT1)

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
INT1	287	1	7	5.27	1.442
Valid N (listwise)	287				

Q#8 How knowledgeable are you of the dangers and sources of lead poisoning? (AWS2)

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
AWS2	287	1	7	4.66	1.741
Valid N (listwise)	287				

Q#9 Are you likely to ask your doctor (or a pediatrician if you have children) for more information regarding lead poisoning at your next doctor visit? (INT2)

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
INT2	287	1	7	3.05	1.833
Valid N (listwise)	287				

Q#10 Do you feel there has been significant media coverage of lead poisoning in your area? (AWS3)

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
AWS3	287	1	7	2.87	1.549
Valid N (listwise)	287				

Q#11 Which media source do you use most for your news? (MEDIA)

Response	Count	Percentage	Sample Size
TV News	81	27.5%	295
Mobile News	79	26.8%	295
Print Media	23	7.8%	295
Friends, Family and/or Relatives	9	3.1%	295
Radio	22	7.5%	295
Social Media	73	24.7	295
Ya mum	1	.3%	295
NY Times Prescription	1	.3%	295
TV News on news-channel's Facebook pages	1	.3%	295
Email from sources	1	.3%	295
doctor	1	.3%	295
Iowa dept of public health	1	.3%	295
NBC, ABC, CBS	1	.3%	295
WIC	1	.3%	295

Q#12 What is your gender? (Gender)

Response	Count	Percentage	Sample Size
Male	71	24.1	295

Female	216	73.2%	295
Prefer not to say	8	2.7	295

Q#13 What is your age? (Age)

Response	Count	Percentage	Sample Size
Under 18	1	.3%	295
18-24	79	26.8%	295
25-34	57	19.3%	295
35-44	46	15.6	295
45-54	53	18%	295
55-64	41	13.9%	295
65-74	15	5.1%	295
75 and older	3	1%	295

Q#14 What is your employment status? (EMP)

Response	Count	Percentage	Sample Size
Unemployed	5	1.7%	295
Employed	179	60.7%	295
Self-Employed	10	3.4%	295
Homemaker	15	5.1%	295
Student	69	23.4%	295
Retired	14	4.7%	295
Unable to Work	3	1%	295



Q#15 What is your ethnicity? (ETHN)

Responses	Count	Percentage	Sample Size
White	255	86.4	295
Hispanic or Latino	12	4.1%	295
Black or African American	8	2.7%	295
Native American or American Indian	1	.3%	295
Asian/Pacific Islander	12	4.1%	295
Mixed	2	.7%	295
Jamaican	1	.3%	295
This question is asked incorrectly.	1	.3%	295
Keystone	1	.3%	295
Biracial	1	.3%	295
Mixed: White and Black	1	.3%	295
Mixed Race	1	.3%	295

Q#16 What was your total household income before taxes during the past 12 months? (INCOM)

Responses	Count	Percentage	Sample Size
Under \$30,000	42	14.2%	295
\$30,000-\$49,999	31	10.5%	295
\$50,000-\$69,999	39	13.2%	295
\$70,000-\$89,000	58	19.7%	295

\$90,000-\$109,000	36	12.2%	295
%110,000 or more	89	30.2%	295

Q#17 How many children do you have? (KIDS)

Response	Count	Percentage	Sample Size
0	114	38.6%	295
1	46	15.6%	295
2	62	21%	295
3	41	13.9%	295
4	23	7.8%	295
5	3	1%	295
6 or more	6	2%	295

Q#18 What is the approximate age of your home? (BULT)

Response	Count	Percentage	Sample Size
Before 1980	160	54.2	295
After 1980	105	35.6	295
Unknown	30	10.2	295

Q#19 What is the highest level of education you have completed? (EDU)

Response	Count	Percentage	Sample Size
Some high school credits, no diploma	3	1%	295

High school diploma or the equivalent	21	7.1%	295
Some college credits, no diploma	99	33.6%	295
College degree	86	29.2	295
Graduate degree or higher	86	29.2	295

Q#20 What is your zip code? (ZIP)

## **APPENDIX C**

### **Question coding**

Q#1 Have you ever heard about the potential dangers of child lead poisoning prior to the information provided in the paragraph above? (Danger)

Q#2 Have you ever had your child/children tested for lead poisoning? (Tested)

Q#3 If you have a child, how many times have you had your child/children tested for lead poisoning? (T\_Freq)

Q#3 Do you agree that lead poisoning is an important issue in today's world? (ATT1)

Q#4 Is childhood lead poisoning personally relevant to you? (AWS1)

Q#5 Are you motivated to learn more about the dangers of childhood lead poisoning? (ATT2)

Q#6 Do you believe you could benefit from learning more about lead poisoning? (ATT3)

Q#7 Would you recommend that your friends and neighbors learn more about lead poisoning? (INT1)

Q#8 How knowledgeable are you of the dangers and sources of lead poisoning? (AWS2)

Q#9 Are you likely to ask your doctor (or a pediatrician if you have children) for more information regarding lead poisoning at your next doctor visit? (INT2)

Q#10 Do you feel there has been significant media coverage of lead poisoning in your area? (AWS3)

Q#11 Which media source do you use most for your news? (MEDIA)

Q#12 What is your gender? (Gender)

Q#13 What is your age? (Age)

Q#14 What is your employment status? (EMP)

Q#15 What is your ethnicity? (ETHN)

Q#16 What was your total household income before taxes during the past 12 months? (INCOM)

Q#17 How many children do you have? (KIDS)

Q#18 What is the approximate age of your home? (BULT)

Q#19 What is the highest level of education you have completed? (EDU)

Q#20 What is your zip code? (ZIP)

## Appendix D

### Qualitative research data

Video source: <https://www.youtube.com/watch?v=v93Ds9pTtHM&t=212s>

Genesis physician interview available at:

<https://drive.google.com/open?id=0B7xBiTR2cj3SaW1nS2dTX01nODQ>

Comments analysis available at:

<https://drive.google.com/open?id=0BxnzO8BVd7qdRURQNFF1ckw1VGM>

Hashtags analysis available at:

- #Bmoreleadfree: <https://drive.google.com/open?id=0BxnzO8BVd7qdUIRaUnBnRHfTIE>
- #leadpoisoning: <https://drive.google.com/open?id=0BxnzO8BVd7qdYkRvVnRrTXJUS1E>